

Program	Level of studies		First cycle studies	
	Program name		Physics	
Course name	QUANTUM FIELD THEORY II			
Course ID	Semester	Course status	ECTS credits	L+E
PTH8611	VIII	ELECTIVE	6	2+2
Lecturer	Prof. dr. Dejan Milošević			
Aims and expected learning outcomes	The aim of the course is to deepen students' knowledge of quantum field theory through different examples and applications. Developed formalism of quantum field theory will be applied to quantum electrodynamics and students will be introduced to selected fields of higher course of quantum field theory. Learning outcomes are mastering the applications of quantum field theory and quantum electrodynamics.			
Course content				
Fields with spin 0: Klein-Gordon equation. Fields with spin 1/2: Dirac equation. Fields with Spin 1: Maxwell and Proca equations. Quantization of the photon field. Quantum fields with interactions. Quantum electrodynamics. Selected problems of advanced quantum field theory.				
Student workload (hours)		Grading		
Lectures and Exercises	60	Assessment method	Points	
Exam preparation	90	Partial exam	50	
Assignments		Final exam	50	
Other				
Total	150			
		Total	100	
Literature				
Mandatory:				
1. D. Milošević, Relativistička kvantna mehanika, Univerzitetski udžbenik, bosnia ARS, Tuzla, 2005.				
2. Lecture notes.				
Recommended:				
1. W. Greiner, J. Reinhardt, Field quantization, Springer, Berlin, 1996.				
2. N. Zovko, Osnove relativističke kvantne fizike, Školska knjiga, Zagreb, 1987.				
3. I. Supek, Teorijska fizika i struktura materije, II dio, Školska knjiga, Zagreb, 1977.				
Remarks				